BIOLOGY 1100

VANCOUVER COMMUNITY COLLEGE

Instructor: Maria Morlin

September 2020 – hybrid course

Lab #2: Protist (Topic 13 in manual)

Outline

- Protist lab summary of demonstrations
- Objectives
- Student submissions of microscope slide cellfies
- Pictures of environmental bacteria swab collections.
- Notes on protist characteristics and diversity
- Resources

Protis lab summary of demonstrations

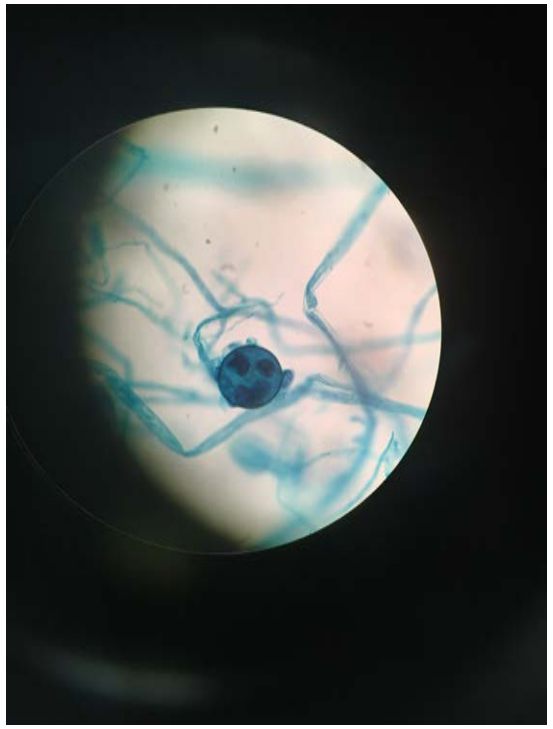
Robyn demonstrated:

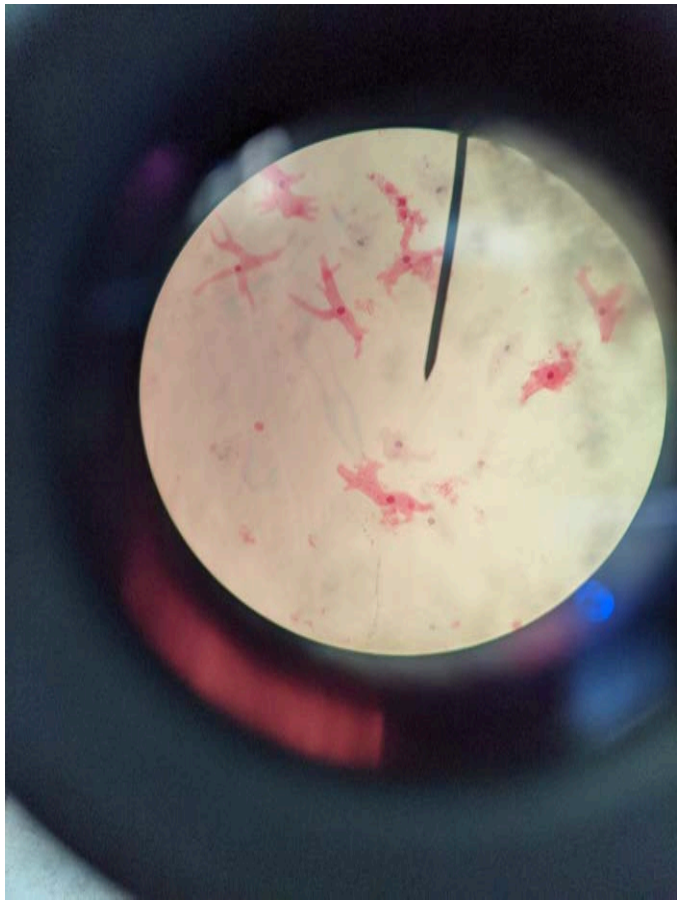
1. content of student stations in the lab, including a microscope, slides, coverslips, trays of prepared and stained samples (to look at before live samples to get a better idea of shapes and sizes of protists), live samples in different tubes (or tubelets☺), and macroalgae.
2. Using a depression slide for amoeba since they are large.
3. Diatomacious earth samples projected from microscope camera.
4. Spirogyra, Chlamydomonas, paramecia, stentor projected from microscope camera.
5. Also, coral samples of symbiont dinoflagellates – and a nematocyte (cell with a nematocyst – stinging cell) of the coral. Nematocytes are features of the invertebrates cnidarians; such as anemones, corals and jellies.

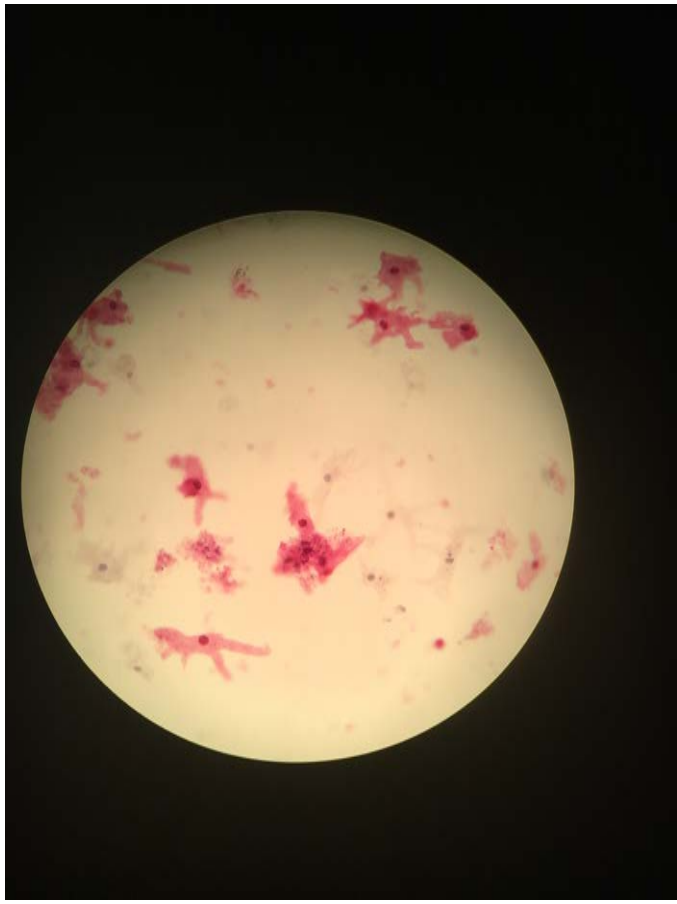
Objectives

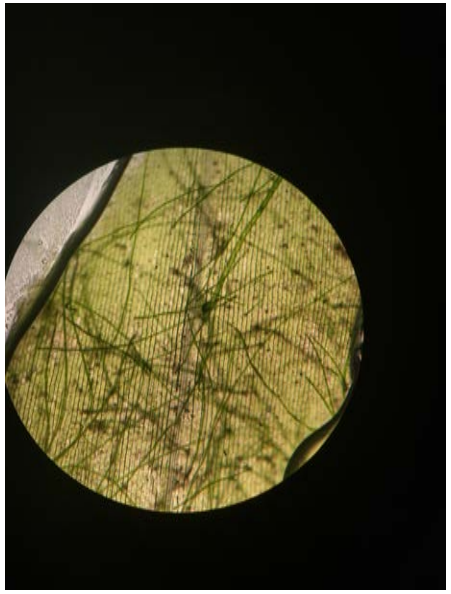
1. Capture and identify characteristics (such as locomotion), ecological role and economic importance of various protist species:
   - Typonosoma, euglena, diatoms, brown algae, water mold, paramecia, dinoflagellates, plasmodium, foraminiferans, radiolarians, amoeba, physarum, dictystelium, red algae, green algae, brown algae. (fill out table)
2. Investigate an unknown pond sample, and try to identify organisms. Many are multicellular, such as nematodes and water bears and unicellular species such as stentor and paramecia my be detectable.
3. Understand the characteristics that place species into particular groups – such as pigments present in green, brown and red algae, cilia of paramecia that make them ciliates, the silica double shell of diatoms and the two flagellae of dinoflagellates.

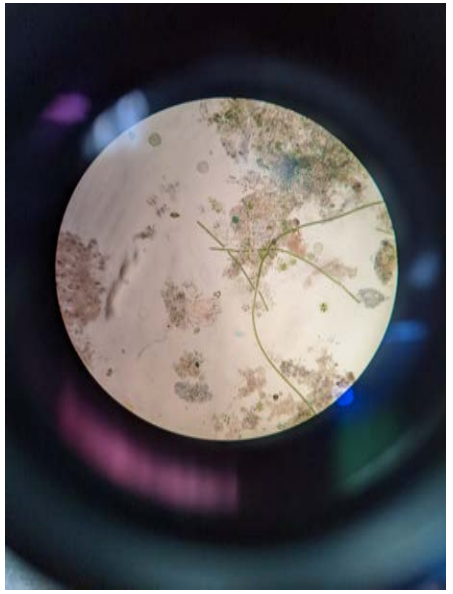
Student submissions of cellfies – see if you can identify the samples and magnification

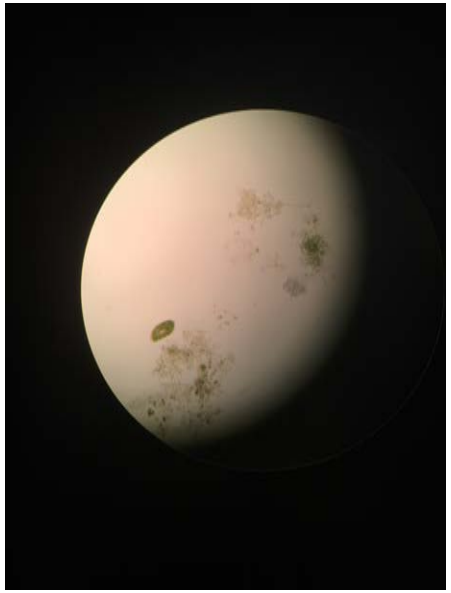


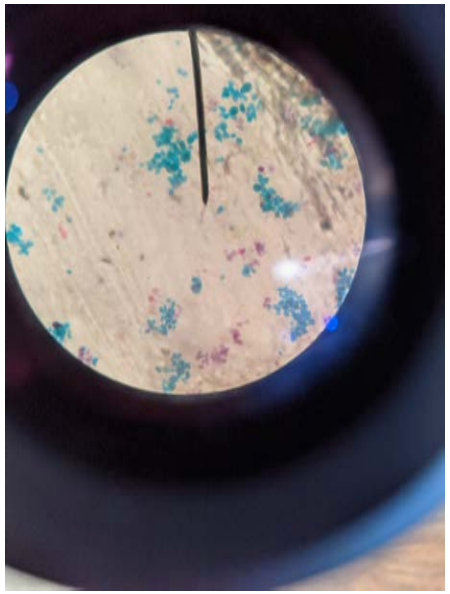










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Some petri dish examples of environmental swabs.

Notes on protists and observations

Protists get around in different ways: amoeba pseudopods, paramecia cilia, euglena and dinoflagellate flagellae. They also exhibit taxis, movement toward or away from food, light and predators. We will discuss reproductive strategies in lecture.

Protists gain energy in different ways, and we will see this in the energy acquisition lab – they may be photoautotrophs or heterotrophs or mixotrophs.

They are mostly unicellular except the macroalgae (seaweeds). They have different body forms, life cycles, pigments and outer coverings.

These factors lead to a great diversity of protists – water-dwellers of enormous importance in carbon sequestering, and beginning of food chains.

Resources

- The lab handout and the book or lecture slides are the best resources for the lab, both available on the class website.

- Here is a nice YouTube video about protists: https://www.youtube.com/watch?v=Ln69k7LyTsU

This is an article about Patrick Keeling from UBC, a local protist researcher.

- https://science.ubc.ca/news/protist-expert-awarded-top-ubc-research-prize